www.LaborMarketUpdate.net:

Real-Time Research-Based Analyses of the State of the U.S. Labor Market

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Abstract

This paper introduces www.labormarketupdate.net, a new website that delivers real-time analyses of the U.S. labor market grounded in our applied macro-labor research agenda. We explain how the site's resources can be used to track labor market developments through the lens of a stylized labor-market cycle.

JEL classification codes: J2, J6, Y1.
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1 Introduction

This paper introduces the purpose and structure of the website www.LaborMarketUpdate.net, which provides real-time analyses of the U.S. labor market informed by our applied macro-labor research agenda. The site is designed as a platform to bridge the gap between academic research and the timely insights needed by analysts and policymakers.

While the state of the labor market is of interest to a wide range of users—including business analysts, researchers, and policymakers—these groups tend to engage with data at different frequencies. Academic research often offers deep insights into labor market mechanisms, but its results are published infrequently and rarely updated after initial dissemination. This limits the practical value of academic findings for those needing high-frequency updates.

This constraint applies to many of our own studies on the U.S. labor market—until now. The launch of www.LaborMarketUpdate.net enables us to present our research-based analyses in a continuously updated format. The site is designed for both quick browsing and deeper exploration, making it accessible to users across the research, policy, and business communities. To support these various uses, the site is organized into several layers of content delivery.

At the core of the site is a rich set of **exhibits**, consisting of charts and visualizations that cover key labor market indicators and relationships. These include results directly based on our own research as well as supplemental indicators drawn from other reputable sources. Every exhibit is available for download in multiple formats for ease of reuse in presentations, social media, or research.[2] Each chart is accompanied by a concise explanation to help users quickly interpret the data.

To connect the visualizations with the underlying research, each exhibit includes a **"Related to"** section. This section links to the academic papers or published statistics that form the basis of the chart. These references are in turn integrated into an interactive bibliography, accessible via the site's **"Biblio"** page.

In addition to the charts and references, the site offers explanations and presentations in the form of recorded YouTube **videos**.[3] These videos present our own interpretations of selected exhibits and feature presentations where these analyses have been used.

For users interested in extending the analysis, the underlying **data** for most exhibits is

[2] All content on the website is in the public domain. We request that users citing or sharing results include a reference to this paper.

[3] Videos are available to users who accept the site's cookie policy.

downloadable in JSON format. These files are accessible through direct HTTP requests and are structured to be compatible with statistical packages like R, Python, and Stata.[4]

Finally, the site includes a section devoted to **teaching materials**, aimed at instructors and students interested in real-time macroeconomic monitoring. This aspect of labor market analysis is underrepresented in standard coursework, despite being highly relevant for careers in economic policy, finance, and consulting. The teaching section features resources such as this paper and a complementary set of regularly updated slides that walk through the key indicators and interpretations.

The remainder of this paper, specifically Section 2, details how the website can be used to teach and analyze labor market developments through the lens of the business cycle. It serves as a teacher's guide, complementing the exhibits and slides available on the site. However, the data on the site extends beyond the analysis of labor market cycles. It also provides valuable information on topics such as long-run trends in labor force participation, dynamism of the labor market, and movements in the U.S. labor share.

Aside from the stylized narrative illustrated in Figure 1, this paper does not reproduce the exhibits found on the website. Instead, it uses hyperlinks to direct readers to the latest versions online. The relevant papers and citations are also found on the website and are not included in this paper.

2 The Stylized Narrative of a Labor Market Cycle

The U.S. labor market is tracked through a wide array of indicators, but there is often a tendency to focus narrowly on specific numbers rather than on the broader patterns that characterize most labor market cycles. Figure 1 illustrates the typical trajectory of such a cycle. This framework is particularly useful because it connects the diverse set of indicators we examine when analyzing labor market dynamics—many of which are featured on www.labormarketupdate.net. In the figure, each indicator is hyperlinked to its corresponding resource on the website.

The U.S. labor market follows a relatively predictable sequence of three stages during each business cycle, from downturns to recoveries to expansions. This section discusses the labor market cycle in terms of these three.

[4] Details on the API-like data access are provided in Appendix A.

2.1 Recession: Labor Market Weakness Sets In

The cycle begins with a broad decline in economic activity, known as a **recession**, that results in a deterioration of labor market conditions.[5] During this phase, businesses face reduced demand for their goods and services, leading them to cut production. This, in turn, triggers a decrease in the number of workers they employ.

As economic growth begins to slow, firms typically respond by pulling back on their job postings and curbing their hiring activity. This reduction in job opportunities means that fewer workers quit their jobs to leave for other employment. If the slowdown deepens into a recession, cost-cutting measures intensify and layoffs become more widespread. This contraction in labor demand is reflected in a sharp rise in the unemployment rate—the share of the labor force actively looking for work but unable to find it—which remains the most prominent indicator of labor market distress during downturns.

Even in economic slowdowns that stop short of a recession—such as those in 1986, 1996, and the so-called "soft landing" of 2023—employers still tend to moderate hiring. When hiring slows, the rate at which unemployed individuals exit unemployment declines. This slowdown in outflows exerts upward pressure on the unemployment rate, a dynamic captured by the positive contribution of unemployment outflows to the 12-month change in the unemployment rate during those periods. With job prospects diminished, it becomes more difficult for unemployed individuals to transition into employment, leading more of them to apply for unemployment insurance (UI) benefits and contributing to a slight uptick in the UI recipiency rate.

What distinguishes full-fledged recessions from milder slowdowns is the marked rise in layoffs, which often triggers a spike in UI claims. These claims, submitted by individuals recently separated from employment, serve as a timely, high-frequency indicator of labor market deterioration. Additionally, the take-up rate—the proportion of eligible workers who actually file for UI benefits—can shed light on how accessible the system is and how attuned workers are to its availability during periods of rising joblessness.

Those who become unemployed are more likely to subsequently drop out of the labor force altogether than those employed, as they become discouraged and stop looking for a job. Because of this, the rise of the unemployment rate puts downward pressures on the labor force participation rate (LFPR), which measures the percentage of the working-age population that is either employed or actively seeking employment. This reduction in the LFPR is an example of an increase in **labor market slack**. Labor market slack refers to the

[5] The gray shaded vertical bars in the time series plots on the website indicate recessions, as identified by the National Bureau of Economic Research's Business Cycle Dating Committee.

underutilization of available labor resources in an economy. It occurs when the labor force is not being used to its full potential, as evidenced by high unemployment, underemployment, and a decline in participation.

The combination of an increase in the unemployment rate and a decline in the participation rate means that the share of the population that is employed also falls. This share is known as the employment-population ratio (EPOP) and provides a broader measure of labor market health than the unemployment rate, as it includes those who have left the labor force. A declining EPOP indicates that a smaller share of the population is contributing to the production of goods and services.

During this phase, wage growth decelerates or stagnates. With reduced competition among firms for workers, businesses have less incentive to offer higher wages. In some cases, wages may even decline, particularly in sectors hardest hit by the downturn. This wage stagnation further dampens consumer spending, contributing to a prolonged cycle of economic decline.

2.2 Early Recovery: The Rebound Begins

As the economy begins to show signs of bottoming out, the labor market enters the **early recovery phase**. This phase is characterized by a gradual improvement in labor market conditions, although overall weakness may persist.

The unemployment rate begins to decline, though the pace of improvement is often gradual and uneven. To fully understand this phase of the recovery, it is essential to examine labor market flows. As firms cautiously begin to rehire, both the job-finding rate and the unemployment-to-employment transition probability start to rise. The speed at which these indicators improve reflects the willingness of businesses to expand their workforce. This renewed hiring activity is a key signal of recovery strength, as it determines how quickly the labor market can reabsorb the unemployed and reduce slack.

Despite signs of recovery, the rate at which employed individuals transition into unemployment remains elevated, indicating that layoffs are still occurring. This persistence of job loss highlights the uneven nature of early recoveries: while some firms resume hiring, others continue to downsize in response to lingering economic uncertainty. The decomposition of trough-to-trough changes in the unemployment rate illustrates how these continued inflows into unemployment moderate the pace of improvement in the overall unemployment rate.

Another dynamic that can slow the decline in unemployment is the reentry of previously discouraged workers into the labor force. As labor market conditions improve, many of

these individuals begin actively seeking work again, shifting from nonparticipation to unemployment. This is reflected in the positive contribution of nonparticipation-to-unemployment (NU) flows to cyclical movements in the unemployment rate. Data on unemployment inflows by duration show that a substantial share of these reentrants report having searched for a job for several months, suggesting a delayed recognition of job search activity in official statistics.

At the same time, initial claims for unemployment insurance begin to decline, pointing to a gradual reduction in the rate of new job losses and a falling share of job losers who file for UI benefits. Still, the labor force participation rate (LFPR) remains subdued, as many individuals remain cautious about re-entering the labor market. Lingering uncertainty and skepticism about job availability keep participation below pre-recession levels.

With a large pool of unemployed workers available, firms can expand without needing to recruit from competitors. As a result, upward pressure on wages remains limited, and wage growth finds its cyclical bottom. Likewise, quits rates—which mostly reflect job-hopping by individuals—remain relatively low during this phase.

2.3 Expansion: An Increasingly Tight Labor Market

The labor market gains further momentum during the **expansion** phase, which is marked by robust and broad-based job growth. As confidence in the economic outlook improves, businesses across a wide range of industries begin expanding their payrolls.

Nonfarm payroll employment rises steadily, reflecting sustained job creation in response to growing consumer demand and increasing business investment. This expansion helps reduce both short-term and long-term unemployment, as a greater number of jobseekers are able to transition into employment.

To support this hiring, firms increase their recruitment efforts by posting more vacancies. As a result, the job openings rate—which measures the number of unfilled positions as a share of total employment plus vacancies—rises. This indicator captures the unmet demand for labor and signals that businesses are either expanding their workforce or seeking to replace departing workers.

The simultaneous decline in the unemployment rate and rise in the job openings rate reflects upward movement along the Beveridge curve—a graphical representation of the relationship between job vacancies and unemployment. This movement signals that labor demand is strengthening and that the labor market is tightening.

In the tightening labor market employers find it increasingly difficult to fill open positions because fewer workers are unemployed and available to hire. In other words, there

is less **labor market slack**. As slack diminishes, employers may raise wages, offer better benefits, or lower hiring requirements in order to attract workers. This shift often leads to faster wage growth, especially for lower-wage workers or those with fewer formal qualifications. Thus, a tightening labor market not only reflects economic recovery but also marks the point at which labor becomes a more scarce—and more valuable—resource.

Labor market flows continue to improve, with rising transition rates from unemployment and nonparticipation to employment. The LFPR continues to recover relative to trend as more individuals are drawn back into the labor force by improved job opportunities.

During latter part of the expansion, the labor market becomes increasingly tight. This phase is characterized by a very low unemployment rate and intense competition among firms for qualified workers. The result is an elevated job openings to unemployment ratio, indicating that there are more job vacancies than available workers. This imbalance signifies very tight labor market conditions, in which employers disproportionately recruit workers from other employers rather than from unemployment.

Workers become more confident in their ability to find new jobs, leading to an increase in the quits rate. The quits rate, which measures the percentage of workers who voluntarily leave their jobs, is a procyclical indicator. A procyclical variable is one that moves in the same direction as the overall economy. In this case, the quits rate rises during economic expansions and falls during contractions. In addition to the quits rate, Employment-to-Employment flows also reflect the increased probability of workers moving between jobs during this phase.

During the latter parts of expansions the imbalance between the high labor demand and labor supply puts pressure on firms to offer competitive compensation. This results in an acceleration of wage growth, both because firms offer higher wages and better benefits to attract employees as well as to retain them.

2.4 Bottom line: Using the Cycle as a Guide

Labor market indicators follow consistent and interpretable patterns across the business cycle. By organizing these indicators into the stylized narrative presented in Figure 1, we can identify turning points, track momentum, and better assess the degree of slack or tightness in the labor market.

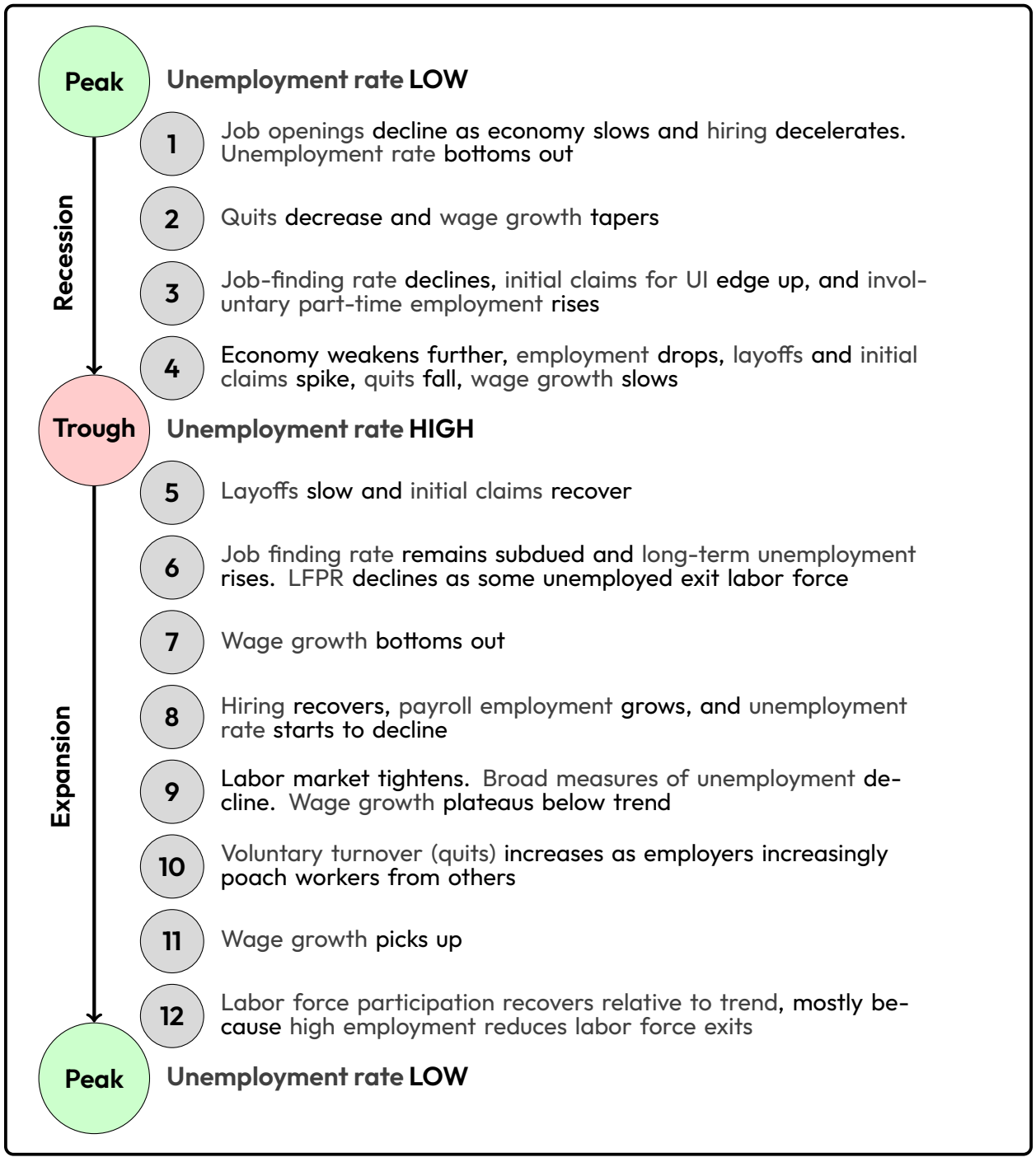

Figure 1: Narrative of a typical cycle in the labor market

Source: www.labormarketupdate.net/index.html?labormarketcycle

A Downloading Data Through HTTP Requests

Although the website does not offer a formal API requiring registration or authentication, it is designed to support automated access to data and metadata through time-invariant, human-readable URLs. All downloadable content is available in structured JSON format, and graphical exhibits can be retrieved in standard formats such as PDF, PNG, and SVG. These stable URLs are suitable for scripting with widely used statistical environments including Python, R, Matlab, and Stata.[6] The URL structure follows a consistent naming convention, which we describe below.

Items. Each piece of content on the site corresponds to a specific "item," which can be accessed via a dedicated URL. When an item is viewed in the browser, its "Direct URL" appears at the bottom of the page. For example, the unemployment rate is located at:

```
https://www.labormarketupdate.net/index.html?unemploymentrate
```

The item name is the string following the question mark—here, `unemploymentrate`. A full list of available items and their descriptions can be retrieved from:

```
https://www.labormarketupdate.net/items/index.json
```

This endpoint returns a JSON file listing all item names along with metadata summaries.

Graphical exhibits. Visualizations for each item are downloadable in several formats. The URL pattern for exhibits is:

```
https://www.labormarketupdate.net/items/slides/[fmt]/[itemname].[fmt]
```

Here, `[itemname]` is the name of the item (e.g., `unemploymentrate`), and `[fmt]` is the desired file format: `pdf`, `png`, or `svg`.

Metadata. Metadata for each item can be retrieved in JSON format using:

```
https://www.labormarketupdate.net/items/metadata/[itemname].json
```

This metadata includes fields such as display name, description, and a flag indicating whether the item includes downloadable data.

Data. If the item's metadata includes `HasData = true`, its underlying data can be downloaded via:

[6] The site does not offer versioned data. Only the most recent vintage of each item is available.

```
https://www.labormarketupdate.net/items/data/[itemname].json
```

The contents and structure of each data file vary depending on the item, but all are formatted for compatibility with standard data analysis workflows.

B Using LaborMarketUpdate.net in the Classroom

This appendix provides some suggestions on how one can use the materials on the website—specifically the paper `LaborMarketUpdate.pdf`, the slide deck `LMUTeachingSlides.pdf`, and the online exhibits at www.LaborMarketUpdate.net—to teach students how to track and interpret U.S. labor market dynamics in real time.

Learning Objectives

- Understand how labor market indicators evolve over the business cycle.
- Interpret data in the context of recessions, recoveries, and expansions.
- Connect real-time data to economic theory using a structured narrative.

Recommended Structure

1. Introduction to the Stylized Cycle

Start by presenting the concept of the stylized labor market cycle using:

- Figure 1 from this paper and Slide 5 from `LMUTeachingSlides.pdf`.
- Emphasize the three core phases: Recession, Recovery, and Expansion.
- Define key concepts such as:
  - Labor Market Slack
  - Procyclical vs. Countercyclical Indicators
  - Labor Market Flows

2. Key Labor Market Indicators

Use the following key indicators to illustrate each phase of the cycle:

- Focus on the exhibits and slides that illustrate key indicators:
  - **Unemployment Rate:** Explain its significance as a primary measure of labor market health and how it trends across the cycle.
  - **Job Openings and Hires:** Demonstrate how these indicators reflect labor demand and hiring activity, particularly in relation to the business cycle.
  - **Labor Force Participation Rate (LFPR):** Discuss the factors that influence LFPR and their implications for the overall labor supply.
  - **Employment-Population Ratio (EPOP):** Explain how EPOP provides a broader view of employment trends relative to the population.
  - **Wage Growth:** Analyze how wage growth responds to labor market tightness and slack across different phases of the cycle.
- Encourage students to explore the interactive exhibits on www.labormarketupdate.net to observe real-time data and trends.

3. Emphasizing Labor Market Flows

Assign students to explore flow-based indicators:

- Stocks and flows: Use the "Labor Force Flows" exhibit to illustrate the dynamics of workers moving between employment, unemployment, and non-participation. Emphasize the difference between net and gross flows.
- Assign students to investigate exhibits related to labor market flows, such as:
  - Job-Finding Rate (PUE): Discuss how this rate reflects the ease with which unemployed workers find employment and its changes during recoveries and recessions.
  - Employment-to-Unemployment Rate (PEU): Analyze how this rate captures layoffs and separations, especially during economic downturns.
  - Initial Claims and UI Take-up: Explain the role of unemployment insurance as a safety net and an indicator of labor market distress.

4. Linking Data to Theory

- Discuss the theory behind empirical regularities like Okun's Law and the Beveridge Curve:

- **Okun's Law:** Use the relevant exhibits to demonstrate the relationship between changes in GDP and the unemployment rate. Point out the close relationship between changes in economic activity and changes in labor market slack.
- **Beveridge Curve:** Use the Beveridge Curve exhibits to discuss labor market search frictions and the joint existence of job vacancies and unemployment. Explain how shifts in the curve suggest changes in matching efficiency or structural frictions.

Active Learning Exercises

- **Guided Analysis:**
  - Divide students into groups and assign each group a specific phase of the labor market cycle (recession, recovery, expansion).
  - Instruct each group to select 3-4 relevant indicators from www.labormarketupdate.net and analyze their trends during the assigned phase.
  - Have each group prepare a short presentation summarizing their findings and interpreting the state of the labor market during that phase.
- **Comparative Analysis:**
  - Select two distinct economic episodes (e.g., the 2008 financial crisis vs. the 2020 COVID-19 recession).
  - Assign students to compare and contrast the labor market dynamics during these episodes using exhibits from the website.
  - Encourage students to consider factors such as the speed of the downturn, the nature of job losses, and the effectiveness of policy responses.

Additional Teaching Tips

- Emphasize Storytelling: Encourage students to develop coherent narratives around the data, focusing on the economic forces that drive changes in labor market indicators.
- Highlight "Related to" Sections: Direct students to the "Related to" sections within each exhibit to connect the data with underlying research papers and statistical sources.
- Demonstrate Data Access: Show students how to use the site's API-like JSON endpoints to download data for use in statistical software like R or Python.